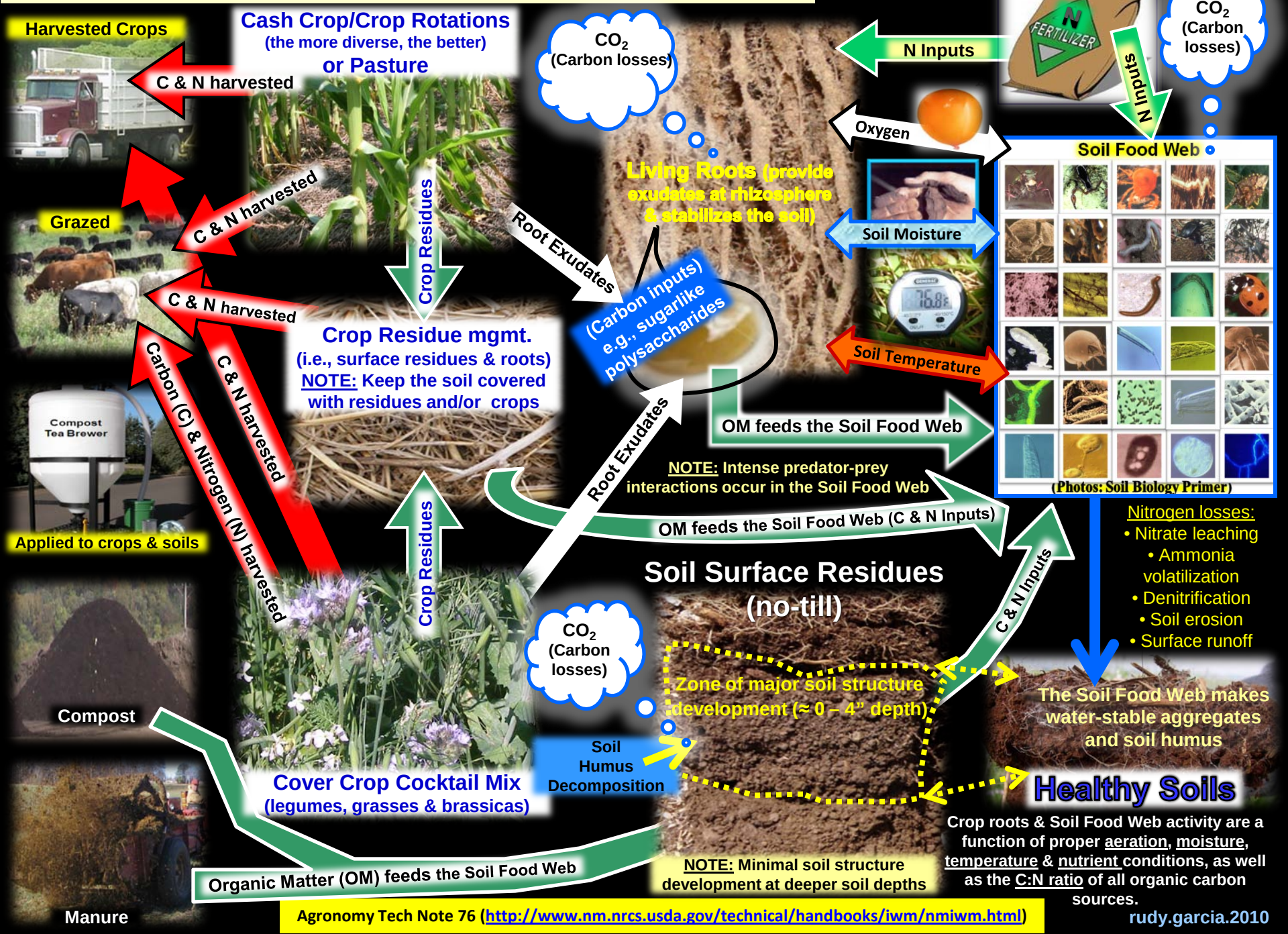
Harvested Crops
Cash Crop/Crop Rotations
(the more diverse, the better)
or Pasture
C & N harvested
Grazed
C & N harvested
C & N harvested
Crop Residues
Root Exudates
CO_2 (Carbon losses)
Living Roots (provide exudates at rhizosphere & stabilizes the soil)
N Inputs
N Inputs
CO_2 (Carbon losses)
Oxygen
Soil Moisture
Soil Temperature
Soil Food Web
(Photos: Soil Biology Primer)
Crop Residue mgmt.
(i.e., surface residues & roots)
NOTE: Keep the soil covered with residues and/or crops
(Carbon inputs) e.g., sugarlike polysaccharides
Carbon (C) & Nitrogen (N) harvested
C & N harvested
Compost Tea Brewer
Applied to crops & soils
Root Exudates
OM feeds the Soil Food Web
NOTE: Intense predator-prey interactions occur in the Soil Food Web
OM feeds the Soil Food Web (C & N Inputs)
Crop Residues
Soil Surface Residues
(no-till)
C & N Inputs
Nitrogen losses:
• Nitrate leaching
• Ammonia volatilization
• Denitrification
• Soil erosion
• Surface runoff
CO_2 (Carbon losses)
Zone of major soil structure development (≈ 0 – 4" depth)
The Soil Food Web makes water-stable aggregates and soil humus
Compost
Soil Humus Decomposition
Cover Crop Cocktail Mix
(legumes, grasses & brassicas)
Healthy Soils
Crop roots & Soil Food Web activity are a function of proper aeration, moisture, temperature & nutrient conditions, as well as the C:N ratio of all organic carbon sources.
Organic Matter (OM) feeds the Soil Food Web
NOTE: Minimal soil structure development at deeper soil depths
Manure
Agronomy Tech Note 76 (http://www.nm.nrcs.usda.gov/technical/handbooks/iwm/nmiwm.html)
rudy.garcia.2010